

## “Weekend Workshop on Internet of Things (IoT)” by Ashutosh Singh

### Day 1

#### + **Session 1: Gliding with Cloud**

- Understanding the Cloud
- Cloud Computing (Speech to Text, ...)
- Building MQTT based M2M networks

#### + **Session 2: Programming the Things (Edges)**

- Setting up Things (SBC, ...)
- Programming through Python, C, Web, ...
- Subscribing, Publishing, and Analyzing data

### Day 2

#### + **Session 3: Interfacing Sensors (Endpoints) and Data Logging**

- Setting up Analog & Digital sensors w/ IoT
- Real-time Data Acquisition & Publishing from Sensors
- Subscription & Analysis on IoT Edges
- Data logging, storing &/or displaying on IoT server

#### + **Session 4: Monitoring and Controlling Devices**

- Sensor data exchange using GSM
- Device Monitoring using Android apps
- Controlling devices using Smart Phone

#### + **Wrap Up**

- Conclusion
- What Next?

**Caution: All sessions are highly interactive & hands-on with hardware**

## Hands-On Details

### + **Cloud Interactions**

- Setting up the Cloud
- Implementing & Using Cloud APIs (Speech to Text, ...)
- Implementing & Using MQTT Cloud Broker

### + **Programming the Things**

- Learning & Implementing the various Programming Interfaces
- Cloud Interaction from an Embedded IoT Device

### + **Interfacing Sensors and Data Logging**

- Setting & Configuring / Programming up various Analog & Digital Sensors
- Reading & Uploading various Sensor Data
- Collecting, Analyzing & Displaying Data

### + **Monitoring and Controlling Devices**

- Alert communication over GSM
- Device Monitoring using Android apps
- Controlling devices using Smart Phone